



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,978	11/16/2001	Fred J. Callahan	CLLP:101_US_	7658
24041	7590	10/16/2003	EXAMINER	
SIMPSON & SIMPSON, PLLC 5555 MAIN STREET WILLIAMSVILLE, NY 14221-5406			BUTLER, DOUGLAS C	
			ART UNIT	PAPER NUMBER
			3683	

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/992,978

Applicant(s)

CALLAHAN ET AL.

Examiner

Douglas C. Butler

Art Unit

3683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-21 is/are pending in the application.
- 4a) Of the above claim(s) 4,5 and 8-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6 and 15-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-6 and 8-21 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. An action on the merits of claims 1-3, 6 and 15-21 considered readable on the invention of Group I and on the elected species is included in this office action. Claims 4-5 and 8-14 are withdrawn from consideration under 37 C.F.R. § 1.142(b) as being drawn to a nonelected invention and species. Election was made without traverse in that no arguments have been set forth.
2. Claim 7 has been canceled.
3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 1-3, 6, 15-16, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urban (4588050), of record, in view of Morgan, Jr.(4081307), newly cited.

The principal reference to Urban discloses the invention substantially as claimed. However, the principal reference to Urban does not disclose the feature of claims 1, 15

Art Unit: 3683

and 18 directed to the attachment rigid structure 34(a plurality of which are shown in Figure 1B thereof) wherein the rigid structure forms a closed loop with the backing plate being made of friction material in the context defined by applicants.

The secondary reference to Morgan, Jr. teaches making the material which is used to attach a pad to a backing plate with softer material to avoid or at least minimize scoring of the brake drum or brake rotor by conventional hard metallic rivets or the like. See Column 1, lines 10-39 of Morgan, Jr. reproduced below to aid applicants:

"HISTORY OF THE ART

(3)For many years brake linings, formed of a relatively hard, long-wearing friction material, have been applied to brake shoes or brake tables, as they are sometimes called. These linings are curved in shape and, in operation, are forced against the inside of a brake drum by a mechanical, hydraulic, or pneumatic pressure to brake the rotative movement of a vehicle wheel carrying the drum.

(4) It has been most usual, throughout the history of the automobile, that these linings be fastened to the brake shoes by rivets made of copper or brass. The rivets are set into the lining so that a considerable amount of wear can take place before the rivets can contact the brake drum. Even though the rivets were [eventually] made of a relatively soft material[examiner's emphasis and underlining], it was still possible that the wear surface of the drum would be scored by the rivets as the linings wore away. This would require a turning of the brake drum, that is, a machining of the interior wear surface of the drum to provide a smooth surface when linings were replaced to prevent undue wear and damage to the new linings.

(5) In recent years, while riveted linings are still in use, it has been the practice to bond brake linings by an adhesive to the brake shoes. Thus, no rivets were used and the linings can be used to a greater percentage of the total thickness without danger of damage to the brake drums. This was also an economy since inspection and replacement could be less frequent."

It would have been obvious at the time the invention was made to one having ordinary skill in the art to which the invention pertains to modify the principal reference to Urban to make the material of the attachment structure 34 of softer material, i.e.,

friction material, as opposed to conventional harder material as taught by Morgan, Jr, in order to material to avoid or at least minimize scoring of the brake drum or brake rotor by engagement of the attachment structure 34 when the friction lining or pad 8 wears down to the point where engagement between the member 18 and attachment structure 34 is imminent.

6. Claims 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urban in view of Morgan, Jr. as applied to claims 15 and 18 above, and further in view of Schultz(5601174).

The principal reference to Urban (4588050), as modified, discloses the invention substantially as claimed. See column 3, lines 34-41 of Urban(4588050) which discloses drum and disk brakes and other types of coupling arrangements. The principal reference to Urban (4588050) does not expressly disclose the feature of claim 17 and 21 directed to the article or apparatus being a clutch.

The tertiary reference to Schultz(5601174) teaches a clutch plate and lining with attachment means.

It would have been obvious at the time the invention was made to one having ordinary skill in the art to which the invention pertains to modify the principal reference to Urban (4588050), as modified, to use the attachment arrangements for attaching a clutch and its lining as taught by Schultz(5601174) since the attachment applies equally well with clutches and brakes since they are in the same filed of technology insofar as attachment applies.

Art Unit: 3683

7. Claims 1-3, 6, 15-16, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urban (4588050), of record, in view of Strasser et al(US005984055), newly cited.

The principal reference to Urban discloses the invention substantially as claimed. However, the principal reference to Urban does not disclose the feature of claims 1, 15 and 18 directed to the attachment rigid structure 34(a plurality of which are shown in Figure 1B thereof) wherein the rigid structure forms a closed loop with the backing plate being made of friction material in the context defined by applicants.

The secondary reference to Strasser et al teaches making the material which is used to attach a pad to a backing plate with friction material to avoid scoring of the brake rotor when the lining attachment portions 46 contact the brake rotor.

See column 2, lines 11-46 of Strasser et al which state:

"Typically, brake pads are riveted to the back plate to form the brake pad and back plate assembly. However, a common problem with this type of assembly is the incidence of the rivets "scoring" the brake rotors when the brake pads wear down too far past the point of needing replacement. More recently with the advent of high strength adhesives, so-called "bonded" brake pads have been employed wherein the pads are attached with adhesive to the back plate. With the bonded brake pads and back plate assemblies, the pads can wear to the point that the back plate itself is contacting the drum or rotor before damage can occur. Unfortunately, the use of adhesives to bond the pad to the back plate presents problems of its own. First, the types of high strength adhesives appropriate for use in bonded brake pad assemblies are expensive and tend to be environmentally hazardous. Thus, their use can cause considerable difficulties that increase the costs of the brake pad and back plate assembly, or their use may be prohibited altogether by local environmental protection laws. In addition, the build up of heat in the brake pad and back plate assembly during braking operations can be extreme enough in some systems to burn or degrade many of the aforementioned adhesives. This can lead to detachment of the brake pad and cause the brake to fail. Further, there is typically a large difference in coefficients of thermal expansion between a brake pad made of FRCMC material and a metal back plate structure. This mismatch can cause the

adhesive bond between the structures to fail when the bonded brake assembly heats up during braking, thereby also potentially leading to detachment of the brake pad and failure of the brake. The difference in expansion coefficients is particularly acute when a steel back plate is employed (as typically would be the case). In fact, to date the inventors of the present invention have been unable to find an adhesive capable of withstand the mismatch in expansion rate between an FRCMC brake pad and a steel back plate."

It would have been obvious at the time the invention was made to one having ordinary skill in the art to which the invention pertains to modify the principal reference to Urban to make the material of the attachment structure 34 of softer material, i.e., friction material, as opposed to conventional harder material as taught by Strasser et al. in order to material to avoid or at least minimize scoring of the brake drum or brake rotor by engagement of the attachment structure 34 when the friction lining or pad 8 wears down to the point where engagement between the member 18 and attachment structure 34 is imminent.

8. Claims 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urban in view of Strasser et al. as applied to claims 15 and 18 above, and further in view of Schultz(5601174).

The principal reference to Urban (4588050), as modified, discloses the invention substantially as claimed. See column 3, lines 34-41 of Urban(4588050) which discloses drum and disk brakes and other types of coupling arrangements. The principal reference to Urban (4588050) does not expressly disclose the feature of claim 17 and 21 directed to the article or apparatus being a clutch.

The tertiary reference to Schultz(5601174) teaches a clutch plate and lining with attachment means.

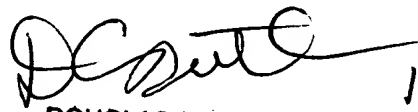
It would have been obvious at the time the invention was made to one having ordinary skill in the art to which the invention pertains to modify the principal reference to Urban (4588050), as modified, to use the attachment arrangements for attaching a clutch and its lining as taught by Schultz(5601174) since the attachment applies equally well with clutches and brakes since they are in the same field of technology insofar as attachment applies.

9. Applicant's arguments with respect to the rejected claims have been considered but are moot in view of the new ground(s) of rejection.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Exmr. Butler whose telephone number is (703) 308-2575. The examiner is normally in the USPTO Monday-Friday from 5:30 a.m. to 2:00p.m. Although the examiner may not always be present in his office to immediately answer the phone when called, the examiner will make every effort to return the call as soon as possible. If the examiner does not answer his phone, the examiner suggests that a brief message be recorded on the examiner's voice mail machine when necessary and appropriate. The examiner normally checks recorded phone calls at least once a day unless on leave.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.


DOUGLAS C. BUTLER
PRIMARY EXAMINER
AU 3683
10/12/03